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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 0114096.00121US2 (ZI-47)	
		Application Number 10/765,368-Conf. #1581	Filed January 27, 2004
		First Named Inventor Henry A. HILL	
		Art Unit 2873	Examiner J. C. Fang

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).  
Note: No more than five (5) pages may be provided.

I am the

applicant /inventor.  
 assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b)  
is enclosed. (Form PTO/SB/96)

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NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.  
Submit multiple forms if more than one signature is required, see below\*.

<input type="checkbox"/> *Total of <u>1</u> forms are submitted.
I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail, in an envelope addressed to: MS AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
Dated: July 5, 2007 Signature: <u>Maureen J. Hill</u>

The Examiner rejected claims 25, 38, 49, 52, and 54 under 35 U.S.C. 102(a) as being anticipated by Alfano et al. (U.S. 5,150,248). He argues:

Alfano '248 discloses in col. 6, line 4- col. 7, line 4 that each of the first and second beams experience a shift in frequency. Specifically, beam 15 associated with frequency F1 experiences pulse frequency modulation via the Kerr shutter which operates to effect the "repetition rate" of the pulses incident thereon – see col. 6, lines 23-26 - and beam 17 associated with frequency F2 gets "frequency shifted" as discussed in col. 6, lines 65- col. 7, line 4. Thus, each of the first and second beams experiences a shift in a frequency parameter.

We note, however, that, contrary to what the Examiner appears to believe, Alfano's beam 15 in Fig. 1 does not experience a shift in its repetition rate, either actually or effectively. Moreover, the Examiner has not provided any evidence to the contrary.

Device 18, which includes Kerr shutter 19, modulates beam 15 by blocking certain pulses in beam 15 when the shutter is closed and by allowing other pulses in beam 15 to pass through when the shutter is opened by an incident gating pulse (Col. 6, LL. 23-33). In this way, Kerr shutter 19 encodes information onto the pulse stream of beam 15. Encoding information onto beam 15 does not change the pulse frequency or repetition rate of the carrier beam. It is simply a way of modulating the amplitude of that beam (between two values, namely, zero and maximum) so that it carries the desired information.

If one were to do a Fourier analysis of modulated beam, the pulse frequency of the beam would be a dominant frequency in the spectrum and this dominant frequency would not shift in response to being modulated by the gating signal. Adding the modulation onto the beam simply changes the spectral content of the beam.

Moreover, the repetition rate of beam 15 must not change since the pulses in the modulated beam need to overlap inside of non-linear material 29 with the pulses of beam 17. Beams 15 and 17 are generated with the same repetition rate at the beam splitter 14-2 (Col. 6, LL. 15-16). After beam 15 is modulated by the optical Kerr shutter 19, it is recombined with beam 17 at the beam splitter 25, but only after it passes through an adjustable optical delay 24 to compensate for the longer optical path traversed by beam 17, "so that the pulses in beam 15 and the pulses in beam 17 will overlap inside non-linear material" (Col. 6, LL. 37-47, emphasis added). If the repetition rate of

beam 15 shifts, as argued by the Examiner, its pulses would not overlap with the pulses of beam 17, which has maintained its original repetition rate.

We further note Alfano's system does not introduce "a sequence of different shifts in a selected parameter of each of the first and second beams," as required by claim 25. The Examiner points out that beam 17 can experience a shift in spectral frequency when it passes through non-linear material 29 and he directs our attention to the following disclosure in the Alfano patent:

More specifically, if a pulse in beam 17 copropagates through non-linear material 29 with a pulse from beam 15, the output will be the pulse from beam 15 and a pulse corresponding to a pulse from beam 17 frequency shifted an amount that is proportional to the peak power of the pulse from beam 15. On the other hand, if there is no pulse from beam 15 then the pulse from beam 17 will pass through non-linear material undistorted. (Col. 6, line 65 to col. 7, line4)

But a careful reading of that passage, including the last sentence of the paragraph, indicates that there is only one shift that is imposed on the spectral frequency of beam 17, namely, the shift that occurs when a pulse of beam 15 is also propagating through the non-linear material. Otherwise, when there is no pulse of beam 15 simultaneously passing through the non-linear material, no shift occurs in beam 17. In short, non-linear material only imposes one shift on beam 17, namely, the shift associated with a pulse in beam 15. It does not impose a "sequence of different shifts," as required by the claim.

Similar reasoning applies to claim 38 which recites "introducing a sequence of different shifts in a selected parameter of each of the first and second beams, said selected parameter selected from a group consisting of phase and frequency." All other rejected claims depend from claim 25 or claim 38 and thus include similar limitations.

So, for at least the reasons stated above, we submit that Alfano's patent does not anticipate the present claims and they are in condition of allowance, which action is requested.